

REMARKS

Claims 1-3 and 5-16 are pending in the above-identified application. Support for new claims 5-16 is found in the original claims, as well as at pages 15-20 of the specification.

Issues Under 35 U.S.C. 102(b) and 103(a)

Claims 1-3 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Sugimoto '936 (USP 6,390,936).

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto '936 in view of Kato '009 (U.S. 2003/0064828 A1 which is now U.S. Patent No. 6,723,009).

It is noted that the basis for the first rejection of original claims 1-3 has been removed, since claim 4 has been incorporated into claim 1. Therefore, this first rejection should be withdrawn.

With regard to the second rejection based on Sugimoto '936 and Kato '009, it is submitted for the reasons stated below that this rejection should also be withdrawn.

Present Invention and Its Advantages

The present invention as recited in amended claim 1, includes the following features:

[i] the intermediate layer has a thickness of 0.3 to 2.5 mm and a hardness in Shore D hardness of 50 to 75;

[ii] the hardness of the intermediate layer is higher than a surface hardness in Shore D hardness of the center and a hardness in Shore D hardness of the outermost layer of the cover;

[iii] the flexural modulus of the intermediate layer is lower than that of the outermost layer of the cover;

[iv] the intermediate layer is formed from a rubber composition which includes polybutadiene, a co-crosslinking agent, organic peroxide and filler as essential components;

[v] the co-crosslinking agent is metal salt other than zinc salt of an α,β -unsaturated carboxylic acid; and

[vi] the amount of the organic peroxide in the rubber composition is not less than 4 parts by weight, based on 100 parts by weight of the polybutadiene.

In the golf ball of the present invention, the intermediate layer is formed from a rubber composition (feature [iv]), because the intermediate layer has high hardness and high rigidity when it is formed from thermoplastic resin (see paragraph [0023], lines 3 to 8 of the specification). Moreover, in order to obtain a vulcanized rubber composition having a higher hardness than conventional golf balls, the amount of the organic peroxide in the rubber composition for the intermediate layer is selected to be not

less than 4 parts by weight, based on 100 parts by weight of the polybutadiene (feature [vi], paragraph [0024] of the specification).

The golf ball of the present invention exhibits various unexpected, advantageous properties. Note that the comparative test results summarized in Tables 4 and 5 at pages 37-38 of the present specification show that Examples 1-3 (present invention) exhibit an advantageous combination of properties including deformation, coefficient of restitution, flight distance and shot feel properties as explained at page 39 of the specification. Thus, by employing the combination of features [i] - [vi], a golf ball according to the present invention exhibiting advantageous properties can be obtained.

Distinctions Between Present Invention and the Sugimoto '936 and Kato '009 Documents

Sugimoto '936 discloses in column 3, lines 13 to 19 of the specification that the co-crosslinking agent for the intermediate layer can be a metal salt of α,β -unsaturated carboxylic acid, including mono or divalent metal salts, such as zinc or magnesium salts of α,β -unsaturated carboxylic acids having 3 to 8 carbon atoms (e.g. acrylic acid, methacrylic acid, etc.) and the preferred co-crosslinking agent is zinc acrylate. However, the intermediate

layer compositions of Examples 1 to 5 contain only zinc acrylate as the co-crosslinking agent. Moreover, the amount of the organic peroxide in the rubber composition for the intermediate layer is from 1.0 to 3.0 parts by weight, based on 100 parts by weight of the base rubber. Therefore, Sugimoto '936 fails to disclose or suggest features [v] and [vi] of the present invention.

Kato '009 discloses in paragraph [0030], lines 1 to 7 of the specification that the co-crosslinking agent for the intermediate layer can be a metal salt of α,β -unsaturated carboxylic acid, including mono or divalent metal salts, such as zinc or magnesium salts of α,β -unsaturated carboxylic acids having 3 to 8 carbon atoms (e.g. acrylic acid, methacrylic acid, etc.) and the preferred co-crosslinking agent is zinc acrylate. However, the intermediate layer compositions of Examples 1 to 3 contain only zinc acrylate as the co-crosslinking agent (Core A, B and C shown in Table 1). It is disclosed in paragraph [0031], lines 5 to 8 of the specification of Kato '009 that the amount of the organic peroxide in the rubber composition for the intermediate layer is from 0.5 to 5.0 parts by weight, based on 100 parts by weight of the base rubber. However, the amount of the organic peroxide in the rubber composition for the intermediate layer of Examples 1 to 3 is 0.5 parts by weight (Core A, B and C shown in Table 1). Therefore, Kato '009 also fails to disclose features [v] and [vi] of the present invention.

In view of the above, it is submitted that significant patentable distinctions exist between the present invention and both the Sugimoto '936 and Kato '009 documents. It is further submitted that even if *prima facie* obviousness has been properly alleged, such obviousness has been rebutted by the evidence of comparative test results showing the unexpected, advantageous properties of the present invention over comparative examples as discussed above in connection with Tables 4-5 in the present specification. Therefore, significant patentable distinctions exist between the present invention and each of the Sugimoto '936 and Kato '009 documents such that the above-noted rejections should be withdrawn.

Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants hereby petition for an extension of one (1) month to

Appl. No. 10/616,968

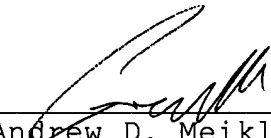
Sunday, October 17, 2004, in which to file a reply to the Office Action. The required fee of \$110.00 is enclosed herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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